

AMENDMENTS TO THE DRAWINGS

The attached "Replacement Sheet" of drawings includes changes to Figures 1 and 2. The attached "Replacement Sheet," which includes Figures 1 and 2, replaces the original sheet including Figures 1 and 2.

Attachment: Replacement Sheet, Page 1/2

REMARKS

This Amendment is responsive to the Office Action mailed March 7, 2006. Claims 1-7, 9-13, 15, 17-25, and 27-33 are pending in the application. Claims 8, 14, 16, and 26 have been cancelled.

DRAWINGS

A substitute drawing sheet for Page 1/2 is being submitted herewith. A minor change has been made to remove reference numeral "13" from Figure 2 and to place numeral "13" in Figure 1. No new matter has been added to the drawings. Entry of this Replacement Sheet is respectfully requested.

SPECIFICATION

Minor amendments have been made to the specification to correct a minor typographical error relating to the term "pre-preg," and also to change the reference from numeral "34" in Paragraph [0021] to numeral "36." A similar amendment has been made in Paragraph [0026]. No new matter has been added to the specification by these minor amendments.

CLAIMS OBJECTED TO

Claims 5 and 14 were objected to because of various informalities.

Claim 5 has been amended per the Examiner's suggestion, and Claim 14 has been cancelled.

REJECTION UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Claims 13-25 and 27-33 were rejected as being indefinite.

In response, Claim 13 has been amended to recite a "metal" sheet. Claim 16 has been cancelled. A minor amendment has been made to Claim 17 to reflect a plurality of "metal sheets." Minor amendments have been made to Claims 20 and 21 to reflect that a single metal sheet is being referenced in independent Claim 13. It is believed that these amendments remove the ground for rejection under 35 U.S.C. § 112, second paragraph. Reconsideration is requested.

REJECTION UNDER 35 U.S.C. § 103

Claims 1-7, 9-25 and 27-33 were rejected under 35 U.S.C. § 103(a) as being obvious over Day et al. (U.S. Pat. No. 5,665,450) in view of the collective teachings of Marini (U.S. Pat. No. 2,322,582) and Orcutt (U.S. Pat. No. 4,277,294), and further in view of Padden (U.S. Pat. No. 5,500,272). This rejection is respectfully traversed.

Initially, it will be noted that Claim 1 has been amended to reference that the generally transparent, fiber pre-impregnated resin tape is applied to the metal sheet to substantially cover the metal sheet and fill the opening. It is respectfully submitted that the combination of references cited by the Examiner does not render independent Claim 1 obvious.

While Day et al. does discuss the formation of an optically transparent composite material, Day et al. does not suggest anything regarding forming an optically transparent window assembly in which one or more metal sheets are substantially covered by the optically transparent, pre-impregnated resin tape.

Marini merely discloses using a plastic sheeting (4; Figure 1), which extends from an edge portion of a pair of glass plates 2. Thus, Marini does not disclose or appear to provide any suggestion towards manufacturing a structural panel by using an optically transparent, pre-impregnated resin tape, and applying the resin tape such that it substantially covers a metal sheet having an opening.

Similarly, Orcutt does not disclose or suggest using an optically transparent, pre-impregnated resin tape to cover an opening in a metal member, such that the resin tape extends to substantially cover the metal sheet, as well as fill the opening in the metal sheet. In Orcutt, it will be noted that the first and second inner layers 31 and 35 do not extend to substantially cover the metal mounting frame 23, and they cannot be said to substantially cover the metal reinforcing insert 21 either.

Padden further does not disclose or suggest, either singly or in combination with the previously-discussed references, the method of Claim 1. Padden merely discloses interweaving a titanium sheet between graphite epoxy plies. The structure does not appear to be suitable for use as a window, as the openings 22 appear to be much too small to provide any reasonable viewing area. Moreover, there does not appear to be any discussion in this reference of forming an optically transparent window with an integrally formed inner layer of a metal sheet. It is respectfully submitted that the above references have been combined in hindsight using the Applicant's disclosure as a roadmap.

Claim 1 particularly points out a method in which a pre-impregnated resin tape is used to cover an opening in a metal sheet, as well as to substantially cover the metal sheet itself. Upon curing, the generally transparent, pre-impregnated resin tape forms a

see-through portion of the metal sheet, while the resin tape substantially covers the metal sheet as well. It is noteworthy that not one of the references cited discloses or suggests using optically transparent, fiber pre-impregnated resin tape to cover an opening in a metal sheet, and forming a window by laying the resin tape over the opening in the metal sheet such that the resin tape also covers substantially the perimeter area of the metal sheet. As noted above, Day et al. mentions nothing about the perimeter structure that would be needed to support and to integrate the optically transparent material into another structure, for example, a fuselage. Similarly, Marini and Orcutt, while mentioning the use of glass plates or optically transparent interlayers, still do not disclose or suggest overlapping the glass plates or interlayers over metal frame areas having an opening such that the optically transparent material covers substantially the entire metal sheet. As noted above, Padden does not disclose whatsoever using optically transparent material, in connection with a metal sheet having a hole that forms a window, such that a window assembly may be formed in a single manufacturing operation.

In view of the foregoing, reconsideration and withdrawal of the rejection of Claims 1-7, 9-25 and 27-33 are respectfully requested.

Claims 13-25 and 27-25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Stefanik (U.S. Pat. No. 4,004,388) in view of Roberts et al. (U.S. Pat. No. 3,953,630), also in view of Padden and also in view of Day et al. This rejection is also respectfully traversed.

With specific regard to independent Claim 13, it will be noted that this claim has been amended to recite a metal sheet having a plurality of spaced apart openings. Further amendments to independent Claim 13 point out that the pre-impregnated resin tape is aligned such that the pre-impregnated resin tape completely covers the openings and overlays a periphery of the metal sheet, such that a plurality of see-through portions in the skin panel are formed. Again, it is respectfully submitted that this method is not disclosed or suggested by the references cited by the Examiner.

Stefanik appears to disclose a plurality of strap members 25, 26, 27 and 28 that are stated as being of fiberglass impregnated with a thermo-setting resin. The strap members are apparently used to sandwich rigid transparent material layers 14 and 15, together with an interlayer 16. There is no suggestion of using a metal sheet and of overlaying a pre-impregnated resin tape over an opening in the metal sheet, as well as to overlay a periphery of the metal sheet, as explicitly set forth in Claim 13.

Roberts et al. similarly does not disclose using the pre-impregnated resin tape (i.e., the optically transparent resin-fiber material) to overlay a metal panel or sheet having an opening, such that the resin-tape material completely overlays a periphery of the metal sheets. Roberts et al. merely appears to disclose using a frame structure 15 to help clamp together a plurality of glass sheets 10 and 11, along with a PVB layer 12 and woven glass fiber cloth 23. Again, Day discloses nothing about the frame structure or how the optically transparent material would be integrated with the metal sheet.

Again, it appears that the references have been combined in hindsight using the limitations of originally-submitted Claim 13 as a road map. However, in view of the

amendments to independent Claim 13, it is submitted that this claim now even more positively sets forth the operations in manufacturing multiple window skin panels.

In view of the foregoing, reconsideration and withdrawal of the obviousness rejection of all of the remaining rejected pending dependent claims is most respectfully requested.

DOUBLE PATENTING

The Examiner advised that if Claims 18-21 are found allowable, Claims 23-24 and 27-28 will be objected to under 37 C.F.R. § 1.75 as being substantial duplicates thereof. Claims 1-7, 9-25 and 27-33 were also provisionally rejected on the ground of non-statutory obviousness-type double patenting, as being unpatentable over Claims 7 and 9-19 of co-pending Application No. 10/655,257, in view of Day et al. Similarly, Claims 1-7, 9-25 and 27-33 were provisionally rejected on the ground of non-statutory obviousness-type double patenting, as being unpatentable over Claims 17-20 of co-pending Application No. 11/316,173 in view of Day et al.

In response thereto, a Terminal Disclaimer is being submitted disclaiming the terminal portion of the present application that would extend beyond the expiration of U.S. Application Serial No. 10/655,257. Since the filing date of this application is prior to the filing date of U.S. Application Serial No. 11/316,173, it is believed that this removes this ground for rejection relative to both of these applications and reconsideration is requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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By: 

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